

I-Chao Shen

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<https://jdily.github.io>

Research Interests

Computer graphics, vector graphics, data-driven 2D/3D geometry analysis and processing, machine learning.

Education

National Taiwan University <i>Ph.D. in Computer Science</i> Advisor: Bing-Yu Chen. Thesis: 2D Visual Content Design Driven by Human-Guided Optimization	Taipei, Taiwan <i>Sep 2017 - Dec. 2020</i>
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National Taiwan University <i>Master in Information Management and MBA</i> Advisor: Bing-Yu Chen. Thesis: Perspective-aware Warping for Seamless Stereoscopic Image Cloning	Taipei, Taiwan <i>Sep 2009 - June 2011</i>
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National Taiwan University <i>Bachelor in Information Management</i>	Taipei, Taiwan <i>Sep 2005 - June 2009</i>
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Experiences

Assistant Professor , Tokyo, Japan Dept. of Computer Science, The University of Tokyo	<i>Apr. 2023 -</i>
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Project Assistant Professor , Tokyo, Japan Dept. of Creative Informatics, The University of Tokyo	<i>Sep. 2022 - Mar. 2023</i>
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Postdoctoral researcher - JSPS Foreign Researchers Fellowship , Tokyo, Japan Host : Takeo Igarashi	<i>Dec. 2020 - Aug. 2022</i>
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Research Visitor - JST CREST Project , Tokyo, Japan Supervisor : Takeo Igarashi	<i>Feb 2018 - July 2018, Aug 2019</i>
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Research Assistant - CMLab, National Taiwan University , Taipei, Taiwan Supervisor : Bing-Yu Chen	<i>Apr 2017 - July 2017</i>
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Research Assistant - Imager Lab, The University of British Columbia , Vancouver, Canada Supervisor : Alla Sheffer	<i>Sep 2014 - Mar 2017</i>
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Research Intern - Imagination Lab, Adobe Research , San Jose, CA Supervisor : Nathan Carr, Duygu Ceylan, Zhaowen Wang	<i>May 2015 - Aug 2015</i>
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Research Assistant - CITI, Academia Sinica , Taipei, Taiwan Supervisor : Wen-Huang Cheng	<i>Sep 2011 - July 2014</i>
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Publications

Approximating Procedural Models of 3D Shapes with Neural Networks Ishtiaque Hossain, <u>I-Chao Shen</u> , Oliver van Kaick Eurographics 2025 (conditionally accept)
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FontCraft: Multimodal Font Design Using Interactive Bayesian Optimization Yuki Tatsukawa, <u>I-Chao Shen</u> , Mustafa Doga Dogan, Anran Qi, Yuki Koyama, Ariel Shamir, Takeo Igarashi CHI 2025 (conditionally accept)

CompAct: Designing Interconnected Compliant Mechanisms with Active Material Integration

Humphrey Yang, [I-Chao Shen](#), Nikolas Martelaro, Bo Zhu, Haoran Xie, Takeo Igarashi, Lining Yao
CHI 2025 (conditionally accept)

FontCLIP: A Semantic Typography Visual-Language Model for Multilingual Font Applications

Yuki Tatsukawa, [I-Chao Shen](#), Anran Qi, Yuki Koyama, Takeo Igarashi, Ariel Shamir
Eurographics 2024

Learned Inference of Annual Ring Pattern of Solid Wood

Maria Larsson*, Takashi Ijiri*, [I-Chao Shen](#), Hironori Yoshida, Ariel Shamir, Takeo Igarashi (*: joint first authors)
Computer Graphics Forum 2024

Virtual Measurement Garment for Per-Garment Virtual Try-On

Zaiqiang Wu, Jingyuan Liu, Long Hin Toby Chong, [I-Chao Shen](#), Takeo Igarashi
Graphics Interface 2024

Improving Cache Placement for Efficient Cache-based Rendering

Yu-Ting Wu, [I-Chao Shen](#)
The Visual Computer 2024

StylePart: Image-based Shape Part Manipulation

[I-Chao Shen](#), Li-Wen Su, Yu-Ting Wu, Bing-Yu Chen
The Visual Computer 2024

NeRF-In: Free-Form NeRF Inpainting with RGB-D Priors

[I-Chao Shen](#)*, Hao-Kang Liu*, Bing-Yu Chen (*: joint first authors)
IEEE Computer Graphics and Applications (CG&A) 2023

Palette-Based and Harmony-Guided Colorization for Vector Icons

Miao Lin*, [I-Chao Shen](#)*, Hsiao-Yuan Chin, Ruo-Xi Chen, Bing-Yu Chen (*: joint first authors)
Computer Graphics Forum (Proceeding of Pacific Graphics 2023)

Data-guided Authoring of Procedural Models of Shapes

Ishtiaque Hossain, [I-Chao Shen](#), Takeo Igarashi, Oliver van Kaick
Computer Graphics Forum (Proceeding of Pacific Graphics 2023)

EvIcon: Designing High-Usability Icon with Human-in-the-loop Exploration and IconCLIP

[I-Chao Shen](#), Fu-Yin Cherng, Takeo Igarashi, Wen-Chieh Lin, Bing-Yu Cheng
Computer Graphics Forum Volume 42, Issue 6, September 2023

360MVSNet: Deep Multi-view Stereo Network with 360° Images for Indoor Scene Reconstruction

Ching-Ya Chiu, Yu-Ting Wu, [I-Chao Shen](#), Yung-Yu Chuang
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023 (Algorithm Track)

ClipGen: A Deep Generative Model for Clipart Vectorization and Synthesis

[I-Chao Shen](#), Bing-Yu Chen
IEEE Transactions on Visualization and Computer Graphics (TVCG), pp. 4211-4224, vol. 28, Dec. 2022

StyleFaceUV: a 3D Face UV Map Generator for View-Consistent Face Image Synthesis

Wei-Chieh Chung, Jian-Kai Zhu, [I-Chao Shen](#), Yu-Ting Wu, Yung-Yu Chuang
The British Machine Vision Conference (BMVC) 2022

ODEN: Live Programming for Neural Network Architecture Editing

Chunqi Zhao, [I-Chao Shen](#), Tsukasa Fukusato, Jun Kato, Takeo Igarashi
Proceeding of ACM Intelligent User Interfaces (IUI) 2022

Per Garment Capture and Synthesis for Real-time Virtual Try-on

Toby Chong, [I-Chao Shen](#), Nobuyuki Umetani, Takeo Igarashi
Proceeding of User Interface Software and Technology (UIST) 2021

Data-driven Sketch Beautification with Neural Feature Representation

I-Chao Shen

IEEE Computer Graphics and Applications (CG&A) 2021

Multi-Resolution Shared Representative Filtering for Real-Time Depth Completion

Yu-Ting Wu, Tzu-Mao Li, I-Chao Shen, Hong-Shiang Lin, Yung-Yu Chuang

High-Performance Graphics (HPG) 2021

ClipFlip : Multi-view Clipart Design

I-Chao Shen, Kuan-Hung Liu, Li-Wen Su, Yu-Ting Wu, and Bing-Yu Chen

Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:2008.12933 [cs.GR]

Interactive Optimization of Generative Image Modeling using Sequential Subspace Search and Content-based Guidance

Toby Chong Long Hin*, I-Chao Shen*, Issei Sato, and Takeo Igarashi (*: joint first authors)

Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:1906.09840 [cs.GR]

ZomeFab: Cost-effective Hybrid Fabrication with Zometools

I-Chao Shen, Ming-Shiuan Chen, Chun-Kai Huang, and Bing-Yu Chen

Computer Graphics Forum, Volume 39, Issue 1, Feb 2020

Director-360: Introducing Camera Handling to 360 Cameras

Hao-Juan Huang, I-Chao Shen, and Liwei Chan

in proceeding of MobileHCI 2020

Perception-Driven Semi-Structured Boundary Vectorization

Shayan Hoshyari, Edoardo Dominici, Alla Sheffer, Nathan Carr, Duygu Ceylan, Zhaowen Wang, I-Chao Shen

ACM Transactions on Graphics (Proceedings of SIGGRAPH 2018).

High-resolution 360 Video Foveated Stitching for Real-time VR

Wei-Tse Lee*, Hsin-I Chen*, Ming-Shiuan Chen, I-Chao Shen and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2017)

A Scalable Active Framework for Region Annotation in 3D Shape Collections

Li Yi, Vladimir G. Kim, Duygu Ceylan, I-Chao Shen, Mengyan Yan, Hao Su, Cewu Lu, Qixing Huang, Alla Sheffer, and Leonidas Guibas

ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2016)

Retargeting 3D Objects and Scenes with a General Framework

Chun-Kai Huang, Yi-Ling Chen, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2016)

Data-driven Handwriting Synthesis in a Conjoined Manner

Hsin-Yi Chen, Tse-Ju Lin, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2015)

Gestalt Rule Feature Points

I-Chao Shen and Wen-Huang Cheng

IEEE Transactions on Multimedia (TMM), 17(4), pp. 526-537, 2015

Geometrically Consistent Stereoscopic Image Editing using Patch-based Synthesis

Sheng-Jie Luo, Ying-Tse Sun, I-Chao Shen, Bing-Yu Chen, and Yung-Yu Chuang

IEEE Transactions on Visualization and Computer Graphics (TVCG), 21(1), pp. 56-67, 2015

Stroke-guided Image Synthesis for Skeletal Structure Editing

Sheng-Jie Luo, Chin-Yu Lin, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2013)

Perspective-Aware Warping for Seamless Stereoscopic Image Cloning

Sheng-Jie Luo, I-Chao Shen, Bing-Yu Chen, Wen-Huang Cheng, and Yung-Yu Chuang

ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2012).

Technical Reports and Preprints

AvatarPerfect: User-Assisted 3D Gaussian Splatting Avatar Refinement with Automatic Pose Suggestion

Jotaro Sakamiya, [I-Chao Shen](#), Jinsong Zhang, Mustafa Doga Dogan, Takeo Igarashi
arxiv preprint ([arxiv:2412.1560](#))

AutoPoly: Predicting an Artist-Compatible Polygonal Mesh Construction Sequence from a Silhouette Image

[I-Chao Shen](#), Yu Ju Chen, Oliver van Kaick, Takeo Igarashi
arxiv preprint ([arxiv:2203.15233](#))

Workshop Papers, Short Papers, Posters

Designing Reconfigurable Joints

Atsushi Maruyama, Maria Larsson, [I-Chao Shen](#), Takeo Igarashi
SIGGRAPH ASIA 2024 Technical Communication (Honorable Mention Award)

DualAvatar: Robust Gaussian Splatting Avatar with Dual Representation

Jinsong Zhang, [I-Chao Shen](#), Jotaro Sakamiya, Yu-Kun Lai, Takeo Igarashi, Kun Li
SIGGRAPH ASIA 2024 Poster Program

Generating Font Variations Using Latent Space Trajectory

Sotaro Kanazawa, [I-Chao Shen](#), Yuki Tatsukawa, Takeo Igarashi
SIGGRAPH ASIA 2024 Poster Program

3D Reconstruction from Sketch with Hidden Lines by Two-Branch Diffusion Model

Yuta Fukushima, Anran Qi, [I-Chao Shen](#), Yulia Gryaditskaya, Takeo Igarashi
Eurographics 2024 Short Paper

MicroGlam: Microscopic Skin Image Dataset with Cosmetics

Toby Chong, Alina Chadwick, [I-Chao Shen](#), Haoran Xie, Takeo Igarashi
SIGGRAPH ASIA 2023 Technical Communication

Computational Design of Nebuta-like Paper-on-Wire Artworks

Naoki Agata, Anran Qi, Yuta Noma, [I-Chao Shen](#), Takeo Igarashi
SIGGRAPH 2023 Poster Program

Palette-Based Colorization for Vector Icons

Miao Lin, [I-Chao Shen](#), Hsiao-Yuan Chin, Ruo-Xi Chen, Bing-Yu Chen
SIGGRAPH 2023 Poster Program

OVERPAINT: Automatic Multi-Layer Stencil Generation without Bridges

Yuta Fukushima, Anran Qi, [I-Chao Shen](#), Takeo Igarashi
SIGGRAPH ASIA 2022 Technical Communication

Guided Image Weathering using Image-to-Image Translation

Li-Yu Chen, [I-Chao Shen](#), and Bing-Yu Chen
SIGGRAPH ASIA 2021 Technical Communication

Real-time Image-based Virtual Try-on with Measurement Garment

Toby Chong, [I-Chao Shen](#), Yunfei Qian, Nobuyuki Umetani, Takeo Igarashi
SIGGRAPH ASIA 2021 Emerging Technologies

Transferring Deep Reinforcement Learning with Adversarial Objective and Augmentation

[I-Chao Shen](#), Shu-Hsuan Hsu, and Bing-Yu Chen
IJCAI-PRICAI 2020 Workshop on Knowledge-Based Reinforcement Learning (KBRL)

Large-scale fabrication with interior zometool structure

Ming-Shiuan Chen, [I-Chao Shen](#), Chun-Kai Huang, and Bing-Yu Chen
ACM SIGGRAPH Poster Program 2018

A Deep Learning Based Method For 3D Human Pose Estimation From 2D Fisheye Images

Ching-Chun Chen, Chia-Min Wu, [I-Chao Shen](#), and Bing-Yu Chen.

ACM IUI Poster Program 2018

Retargeting 3D objects and scenes

Chun-Kai Huang, Yi-Ling Chen, [I-Chao Shen](#), and Bing-Yu Chen

ACM SIGGRAPH Poster Program 2015

Painting Photolization

Chien-Wen Jung, [I-Chao Shen](#), Sheng-Jie Luo, Bing-Yu Chen, and Wen-Huang Cheng

ACM SIGGRAPH ASIA Poster Program 2013

Texturing and Deforming Meshes with Casual Images

[I-Chao Shen](#), Yi-Hua Wang, Yu-Mei Chen, Bing-Yu Chen, and Wen-Huang Cheng

ACM SIGGRAPH ASIA Poster Program 2012

User-Assisted Disparity Maps

Hsin-Yi Chen, Yi-Shan Lin, [I-Chao Shen](#), Sheng-Jie Luo, Wen-Huang Cheng and Bing-Yu Chen

Pacific Graphics 2012 short paper

MusicSpace: You “Play” The Music

Chun-Yu Tsai, Hung-Jung Lin, Tzu-Hao Kuo, Kai-Yin Cheng, [I-Chao Shen](#) Bing-Yu Chen, and Rung-Huei Liang

ACM SIGGRAPH Poster Program 2010

Patent

Smoothing images using machine learning

Nathan A Carr, Zhaowen Wang, Duygu Ceylan, [I-Chao Shen](#)

United States Patent, No. 9799102, issued October 24, 2017.

Grants

JSPS Kakenhi Grant-in-Aid for Young Scientists, Japan 2023 - 2028

AIP Challenge Researcher, Japan Science and Technology Agency (JST), Japan. 2021 - 2022

JSPS Grant-in-Aid for Scientific Research for JPSP foreign fellow, Japan. 2021 - 2023

Honors

IPPR Best Ph.D. dissertation award, Honorable mention 2021

JSPS Postdoctoral Fellowship for Foreign Researchers 2020 - 2022

MediaTek Fellowship 2017 - 2020

Invited Talks

Tailored Computational Visual Content Creation, Mar. 2024
ISID (International Symposium on Intelligence Design) 2024

Tailored Computational Visual Content Creation, Feb. 2024
BAI Research Seminar, Institute for AI and Beyond, The University of Tokyo

Computer Graphics around you everyday and how to become a Computer Graphics researcher, July. 2022
Chikushigaoka High School, Fukuoka, Japan

Computer Graphics around you everyday and how to become a Computer Graphics researcher, July. 2022
Tokyo Metropolitan Tama High School of Science and Technology, Tokyo, Japan
JSPS science dialogue program

Per Garment Capture and Synthesis for Real-time Virtual Try-on,
JST CREST 8th Research Area Meeting

Sep. 2021

2D Visual Content Design Driven by Human-Guided Optimization,
The University of Tokyo, Tokyo, Japan

Apr. 2021

Media

Per Garment Capture and Synthesis for Real-time Virtual Try-on

2021, 2022

- BS フジ - ガリレオ X 第 259 回「現実空間 × 仮想空間二つの世界を重ねる最新技術」(JP)
- JST News
- NIKKEI (JP)
- ZAIKEI (JP)
- TechCrunch Japan (JP)
- Tii 技術情報 (JP)
- Independent TV (UK)

Professional Services

- **Technical Paper Committee and others:**

- Eurographics Short Papers Committee (2025)
- SIGGRAPH Technical Papers COI Coordinator (2025) [\[link\]](#)
- SIGGRAPH ASIA Technical Papers Committee (2024) [\[link\]](#)
- AAAI (2023, 2024, 2025)

- **Reviewer:**

- SIGGRAPH, SIGGRAPH ASIA
- NeurIPS, ICLR, ICML
- Eurographics
- CHI
- Pacific Graphics
- WACV
- BMVC
- Transaction on Multimedia (TMM)
- Transaction on Visualization and Computer Graphics (TVCG)

References

Takeo Igarashi

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Bing-Yu Chen

Professor in Department of Computer Science and Engineering / Information Management, National Taiwan University

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Yung-Yu Chuang

Professor in Department of Computer Science and Engineering, National Taiwan University

Email: cyy@csie.ntu.edu.tw